Interreg **CENTRAL EUROPE**

European Union
European Regional
Development Fund

Boost4BSO

BSO capacity building in Central Europe

Handbook
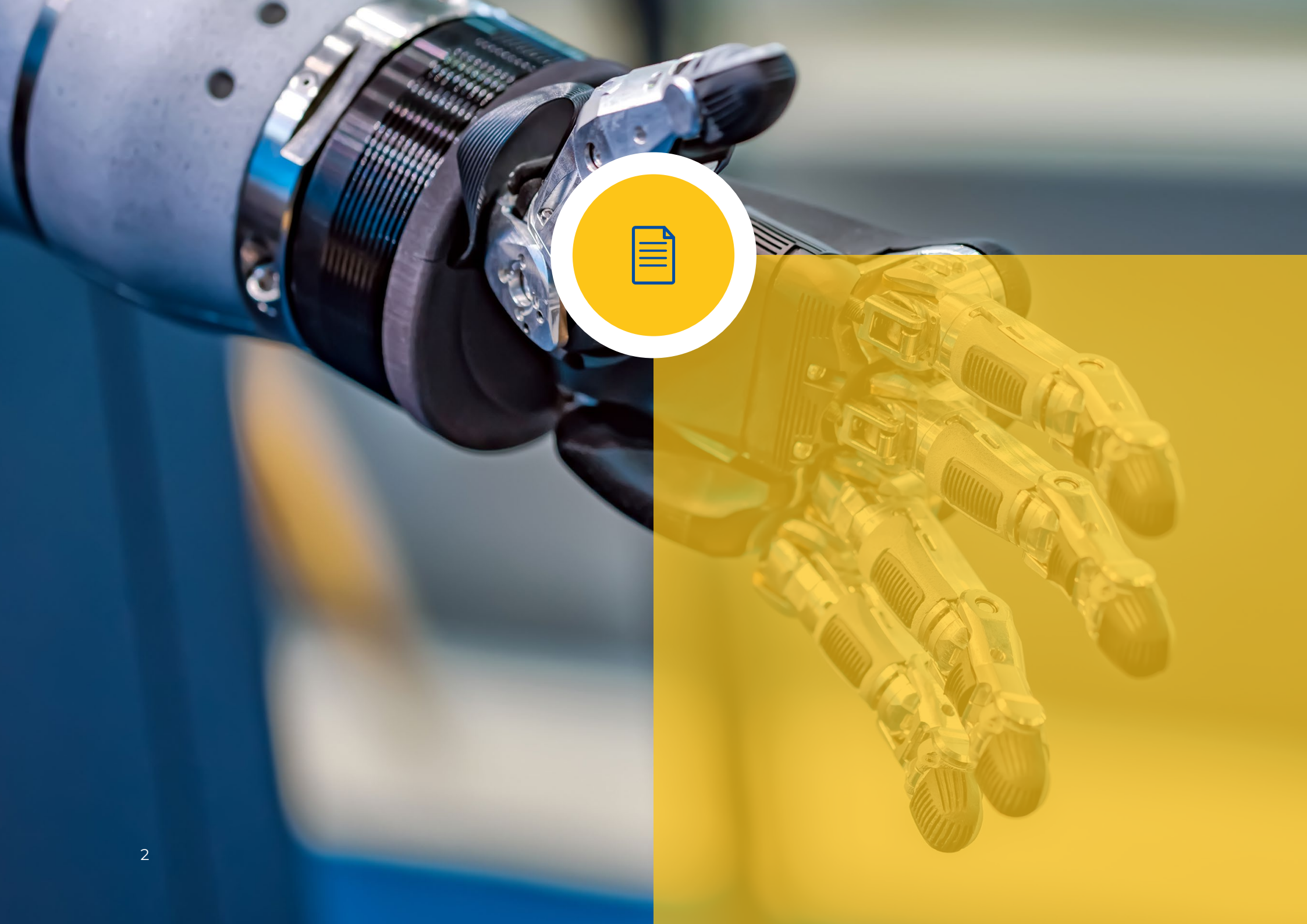
Outline.

for more information visit us at
https://boost4bso.eu/

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01.

Introduction

Capacity building based on "BSOs for BSOs" principle

In the past two years, the Boost4BSO project consortium, consisting of seven BSOs and one Excellence centre from Central Europe (CE) has joined forces to develop and downstream a comprehensive BSO competence pack and implementation toolbox to support local SMEs at different levels of transformation towards I4.0.

The main project objective was to enable CE BSOs, as key innovation system actors, to provide effective and efficient support services for local companies covering all key aspects of transformation towards I4.0. This has helped CE SMEs that until now have lacked basic knowledge on the potential of I4.0 to cope with their own transformation demand and develop I4.0 related business strategies.

With this aim, Boost4BSO has integrated the training curriculum from the project InnoPeer AVM with the product/service innovation approach from Things+ (both former Interreg CE projects), enriching this BSO competence pack with practical SME upscaling cases from IoT4Industry (H2020). These core projects succeeded in piloting highly promising capacity building methodologies for SMEs. However, the interaction between companies and local innovation support actors has not been tackled. As the deficits that prevent

SMEs from taking up I4.0 business opportunities can only be overcome through interventions and transformation support, regional BSOs as local innovation intermediaries have been targeted as the main Boost4BSO objective. Boost4BSO has combined an innovative systemic approach of co-developing I4.0-related BSO capacities and SME competences to develop a comprehensive package of BSO support services. As a first step, this BSO tool pack includes an assessment tool to evaluate the maturity status of the SME, followed by a joint

development of a set of potential solutions to various challenges and concluding with a transformation roadmap.

Within the Boost4BSO project, the partnership has supported more than 30 SMEs in their digital transformation process, and, on the one hand, has gained practice in downstreaming the developed tools and, on the other, hand obtained experience in supporting SME which will be shared with further BSOs.

02.

A snowball mechanism in place

"
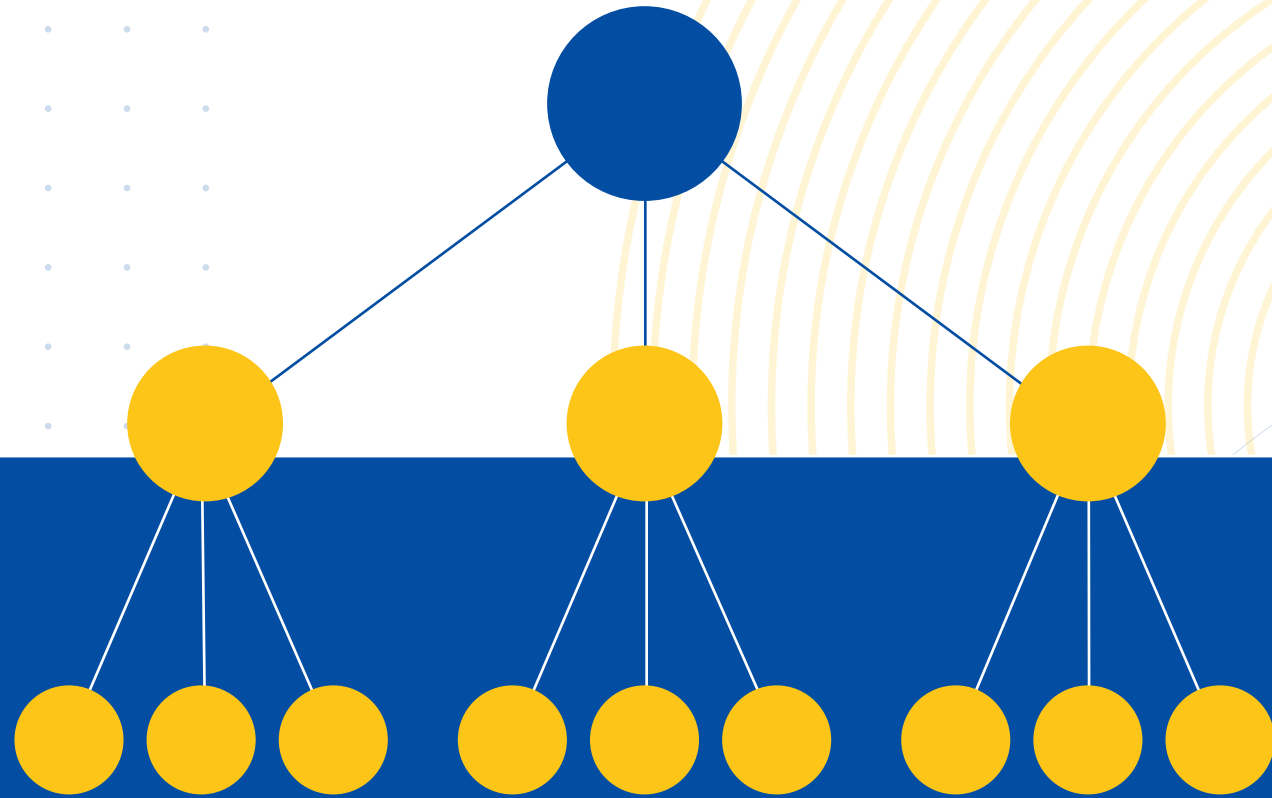
To distribute the acquired knowledge among Central European BSOs, the project partners have developed a "**snowball mechanism**" for a sustainable down-streaming from the BSOs currently participating to others in Central Europe. After an initial trial among the project partners, a follow-up feedback loop and the integration of all lessons learnt, the programme is now ready to be used within Central Europe and beyond.

In the intended knowledge exchange process, there are basically two types of actors:

The **knowledge-seeker** is the party interested in the acquisition of knowledge. In the context of Boost4BSO project the knowledge-seeker is a unit that experiences a need for knowledge in the realm of Industry4.0 and is interested in communicating this need to other parties. Only a company which is aware of its lack of knowledge and is willing to acquire what it is missing represents an eligible participant of the capacity building process.

The so-called "**knowledge-provider**" is a party or source capable and willing to share its knowledge with other entities – be it other knowledge-providers or knowledge-seekers themselves. In the context of Boost4BSO, the knowledge provider is a unit with valuable Industry 4.0 knowledge that is motivated to pass on this knowledge to knowledge-seekers. Knowledge-providers may be business support, educational or, research organisations, reference companies, scientific and industrial conferences, trade fairs or publications.

These different categories of knowledge providers have different motivations to share knowledge:
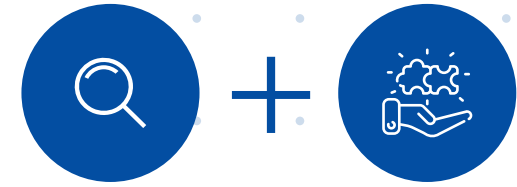
Vertical level

Horizontal level

1

Input Transformation

a. Sharing experiences & best practice exchange

b. Boosting internal competences

c. Keeping up with current trends

2

Output Transformation
New projects, services, products, clients and processes

3

Collaborative Transformation
Networking

4

Competitive Transformation
competitiveness, visibility & reputation

The ideal form factor for effective knowledge transfer was determined to be an event-based collaboration that features use cases, open discussion and transfer/ exchange of knowledge elements. For this reason, "BOOST4BSO Knowledge Sharing Events" have been put forward as the main opportunity for knowledge sharing in the future and can be described as follows:

✓ This is an event (online or offline) organised regularly by BSOs for BSOs.

✓ There is a "call" for a line-up of most important I4.0 topics..

✓ Participants can register for topics of interest.

✓ New "knowledge-owners" emerge after the event with the multiplication and diffusion of knowledge happening in a manner akin to a "snowball effect".

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✓ New knowledge-owners ("multiplicators") serve to spread/multiply the knowledge upon request later, during the time between events (e.g. based on entry into a platform).

✓ The shared knowledge will be fed into the BOOST4BSO platform and tagged with keywords in order to make it systematically accessible to future knowledge seekers:
https://boost4bso.eu/

03.

Topics and methodology for systematically boosting I4.0 transition in SMEs
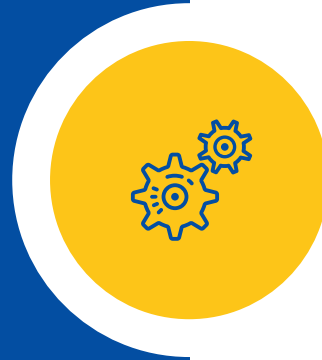
Boost4BSO methodology provides BSOs with an intervention logic and toolbox, thus enabling them in the need for demand-driven support services for Industry 4.0 transformation of local companies. The methodology allows BSOs to deliver a comprehensive, balanced and support for SMEs wanting to introduce new technology in their business without bias in the solution proposed.
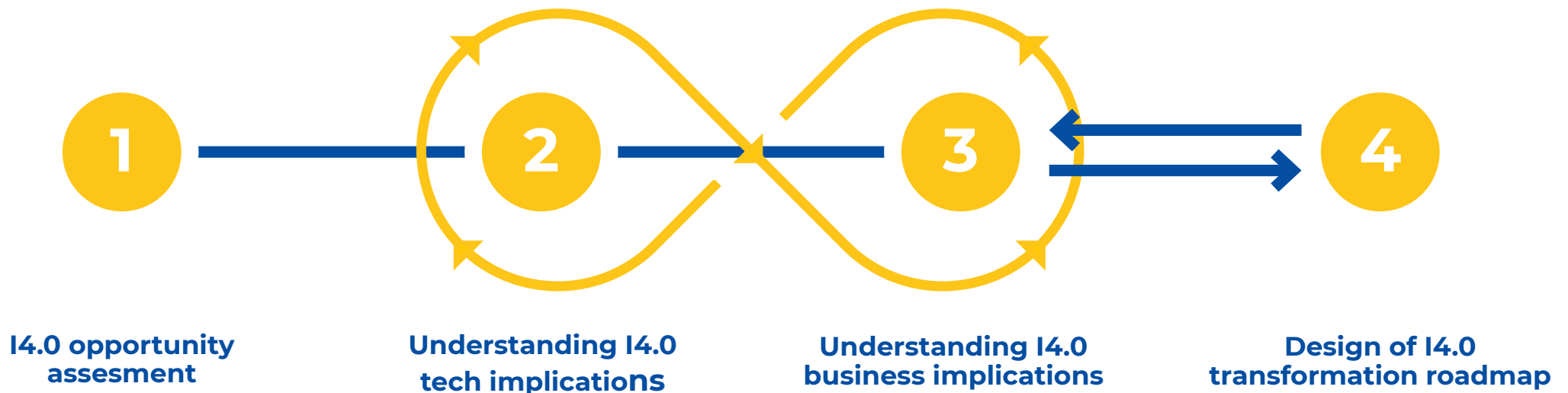
BSO experts providing **comprehensive support** should understand all key aspects of company performance including broad market opportunities and production optimisation limitations and opportunities for business model change based on new technologies set against conservative forces imposed by successful strategies that worked in the past, the interests of existing employees versus automation and business process re-engineering... to name but a few.

Balanced support - both the forces for change and conservative reluctance need to be respected. Industry 4.0 driving forces that act as agents of change are compared with the current state of affairs which resists change due to inertia, values and fear of the unknown. BSO experts are not supposed to impose change but to moderate transition and enable change in management process.

Solution unbiased support - BSO experts, providing solution-unbiased support, are expected to evangelise Industry 4.0 concepts, not specific solutions (and especially not a specific solution provider). As in any complex business-related initiative, BSO experts should accept that there is no universal solution that fits every company, industry or business environment. Support during the identification of trade-offs, pain points and benefits that a particular solution brings in the short or long term, should rely on specific company capabilities to implement and leverage. This methodology allows for a structured comparison of options during the decision-making and implementation process. Key criteria for the selection of a solution is "the most appropriate for a specific company" rather than "the best in general".

The actual SME support process is defined as a structured but simple process, thus enabling various BSOs from different countries with varying levels of specialisation, focus or maturity to integrate it and apply it in its own practice of supporting SMEs. Each phase has distinct sets of activities and knowledge transfer formats, with a specific focus and expected impact on the target SME's Industry 4.0-relevant knowledge and Industry 4.0 implementation capability.

1 I4.0 opportunity assesment

2 Understanding I4.0 tech implications

3 Understanding I4.0 business implications

4 Design of I4.0 transformation roadmap

1

Industry 4.0 opportunity assessment – the ice breaker

The initial engagement with the company should be aimed at an assessment of the existing Industry 4.0 maturity stage of the company and identification of any pain-points, i.e. opportunities to introduce technology solutions. This phase aims to assure the availability of appropriate and actionable information, relevant for companies with limited or no previous knowledge of what Industry 4.0 entails and how it may transform company inner capabilities. It is about creating basic awareness of what Industry 4.0 is, details of the particular Industry 4.0 technologies available and the transformational potential for the company's performance and overall competitiveness.

The aim is to guide companies during the (self)assessment and understanding of what is possible and achievable for a given company. The Industry 4.0 readiness (self)assessment can be carried out as a "1-on-1" or "1-on-FEW" meeting, depending on the BSO's expert capabilities.

2

Understanding Industry 4.0 tech implications – looking for the "black box"

On the basis of the results of the previous step, BSO experts should assist the company in finding any technology "blind spots", identifying potential solutions and suppliers, and drafting forthcoming activities and budget. As already outlined above, BSO experts are expected to disseminate Industry 4.0 concepts, and not promote specific solutions or solution providers, since there is no universal solution that fits every company, industry or business environment. In addition, BSO experts are not usually technology experts as well and thus should moderate the process of exploring needs and potential solutions, while the identification of the exact technology should up to the company and other competent experts.

3 Understanding Industry 4.0 business implications – discovering true value

The second and third steps of the methodology are strongly interrelated, meaning that often the change of technology implies a change in ways of doing business, and vice versa. The third step is all about helping the company understand the impact of the technology on existing business and explore the possibilities to leverage it in terms of competitiveness, new value proposition, transformed business model elements (customer relationships, channels, revenues…), entering new markets, etc. BSO experts should assist the company in structurally revising change requirements in relation to its resources, processes and organization.

When the business-related reasons for investing in new technology are clear, the company can proceed to the drafting of an implementation timeline, which will ease the decision-making process and reduce barriers for the initiation of Industry 4.0 induced transformations.

4 Design of Industry 4.0 transformation roadmap – the path to the future

In the final phase, the company is supported in the process of blueprinting Industry 4.0-induced change, designing the envisioned Industry 4.0 state of affairs and identifying all the steps that will lead to that. From the company's perspective, any impact on the value chain and relevant resources and activities transformed by the Industry 4.0 induced initiative, may take place in three possible strategic directions:

- Upstream – Industry 4.0-enabled integration of suppliers and establishment of partnerships across the inbound value chain
- Internal – Industry 4.0-induced transformations focused on resource utilisation, process reengineering, "waste" reduction, enabling cost advantages, etc.; with the aim of improving the bottom line, speed, flexibility, productivity, customer-centricity, etc.
- Downstream – Industry 4.0-enabled integration of customers based on servitization, customer data and usage-based insights. This enables radical changes of customer understanding, revenue and profit-. sharing, active customer support and predictive maintenance.

The aim is to create an implementation plan with activities, timeline, commitments, responsibilities, selection of suppliers, access to finance, support with employee training. etc. This is based on project management competences implemented within the context of new technology integration and organisational change management.

**Industry 4.0
opportunity assessment**

**Understanding Industry 4.0
tech implications**

**Understanding Industry 4.0
business implications**

**Industry 4.0
opportunity assessment**

Transferability – deployment of the methodology

The methodology is designed to be pragmatic and easily transferable, in order to allow wide deployment among BSOs in Central Europe and beyond. Its goal is to enable capacity building of BSOs with support for Industry 4.0. implementation, despite their varying levels of knowledge, experience and background. Transferability of the methodology was proven by the partnership in a capacity building programme that was implemented **with 80 people from 45 different business support organizations**. A number of these BSOs also participated in implementing the methodology with the companies within the scope of pilot actions.

For the capacity building program, the Boost4BSO partnership implemented 4 joint events online (due to the circumstances arising from the Covid-19 pandemic) and local follow-up meetings in the partners' regions. The online events were designed to reflect the Boost4BSO methodology for supporting SMEs in their adoption of new technologies and transformation towards Industry 4.0.

Poznań Science and Technology Park

Bautzen Innovation Center
(TGZ Bautzen)

ITQ

IW Consult

Usti region, RIS3 team
Regional Authority
Usti region
VZLÚ a.s.

SVÚM a.s.

TCW

COMTES
FHT a.s.

Research Institute for Building Materials
Výzkumný ústav stavebních hmot, a.s.

*

Bayern Innovativ GmbH
Regio Augsburg Wirtschaft GmbH

Plattform
Industrie 4.0

ITG Salzburg

FH Oberösterreich -
University of Applied
Sciences Upper Austria

Fachhochschule
JOANNEUM

Technology Innovation
Centre Medjimurje - TICM

COMET Cluster
Metalmeccanica FVG

Friuli
Innovazione

Unione Industriali Torino
Po.in.tex

Zagreb innovation centre – ZICER

DIHP
MESAP Innovation Cluster

ART-ER

Rijeka development agency Porin
STEP RI Science and technology park
of the University of Rijeka

* Automotive-Cluster
Business Upper Austria
OÖ Wirtschaftsagentur GmbH
Medizintechnik-Cluster/ Business Upper Austria

** Fundusz Górnośląski S.A.
Górnicza Izba Przemysłowo-Handlowa
Katowice Special Economic Zone / Silesia Automotive & Advanced
Manufacturing Cluster

UNIST Technology park

National Centre
for Nuclear Research

Ukrainian Automotive
and Mobility Cluster

Stowarzyszenie Polska
Grupa Motoryzacyjna

**
Agencja
Rozwoju
Regionalnego
S.A.

INNpuls Sp. z o.o.

Business incubator BIOS

Wave 2

80 **people**

from

45

**different business
support organizations**

04.

A platform for learning, discussing and networking

The platform plays an important part in the overall process of training and improving BSOs' competences, during and after the project, as a reference guide and knowledge exchange. It is independent, sustainable, crowd-created and up-to-date library, used by BSOs and SMEs to improve their general and specific knowledge regarding I4.0 knowhow, new developments, best practices, support schemes, relevant events, experts, commercial technology providers etc.

The platform's role is to become a reference guide for both BSOs and SMEs during the creation, implementation and leverage of I4.0 initiatives and transformations within particular companies. The platform complements BSOs' capabilities, upgrading existing or filling the gaps when needed and becoming a part of I4.0 implementation support infrastructure.

Posts are structured and brief information, published on the platform with additional documentation/resources for

- **direct download or**
- **a link to relevant content e.g. documentation/ resources for download/best practice or**
- **a link to relevant websites in the case of posting information about events, experts, technology suppliers or**

- **link to another knowledge exchange platform e.g. online courses, research organisations, databases, public calls etc.**

Three post types are available:
- **Knowledge posts (as documents for download or links),**
- **I4.0 individual expert profiles' posts,**

- **Other I4.0 relevant knowledge sources (e.g. companies such as suppliers and integrators of technologies, events, research organisations, public initiatives).**

Registration

In order to have full access to the content of this platform please register by using the registration form available in the main navigation on top of the page.
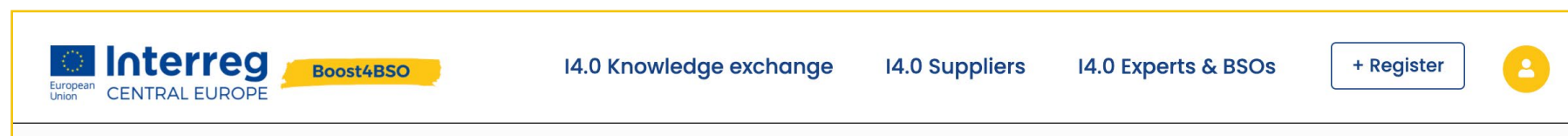
After entering the necessary information, you can (optionally) indicate which type of content and topics you are interested in, and updates on platform activities will be adapted to your choices and sent via email once a month.

After you submit your request to create an account, please wait for verification by the platform administrators. You will be informed via email that your account has been activated.

I am interested in:

☐ Knowledge posts

☐ I4.0 Experts posts

☐ I4.0 Technology provider's posts

Topics:

☐ #automotive

☐ business support

☐ innovation management

☐ Servitization

☐ Smart factory

☐ Smart products

☐ webinars
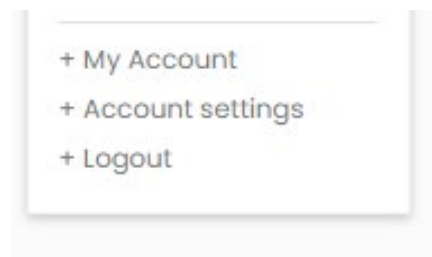
Send me updates:

☐ Monthly updates

Log in

When your account is activated, you can log in by clicking on the yellow Profile icon and Login button, located at the top right corner of the webpage.
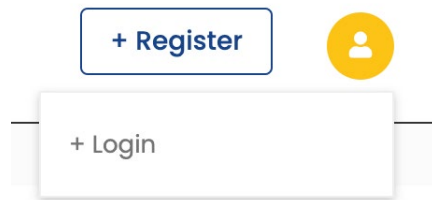
When being logged in, the Profile icon will change into your profile picture (if uploaded), and by clicking on it you access the account menu.

View content

When logged in, you have full access to all the restricted content of the platform, which is divided into three different sections:
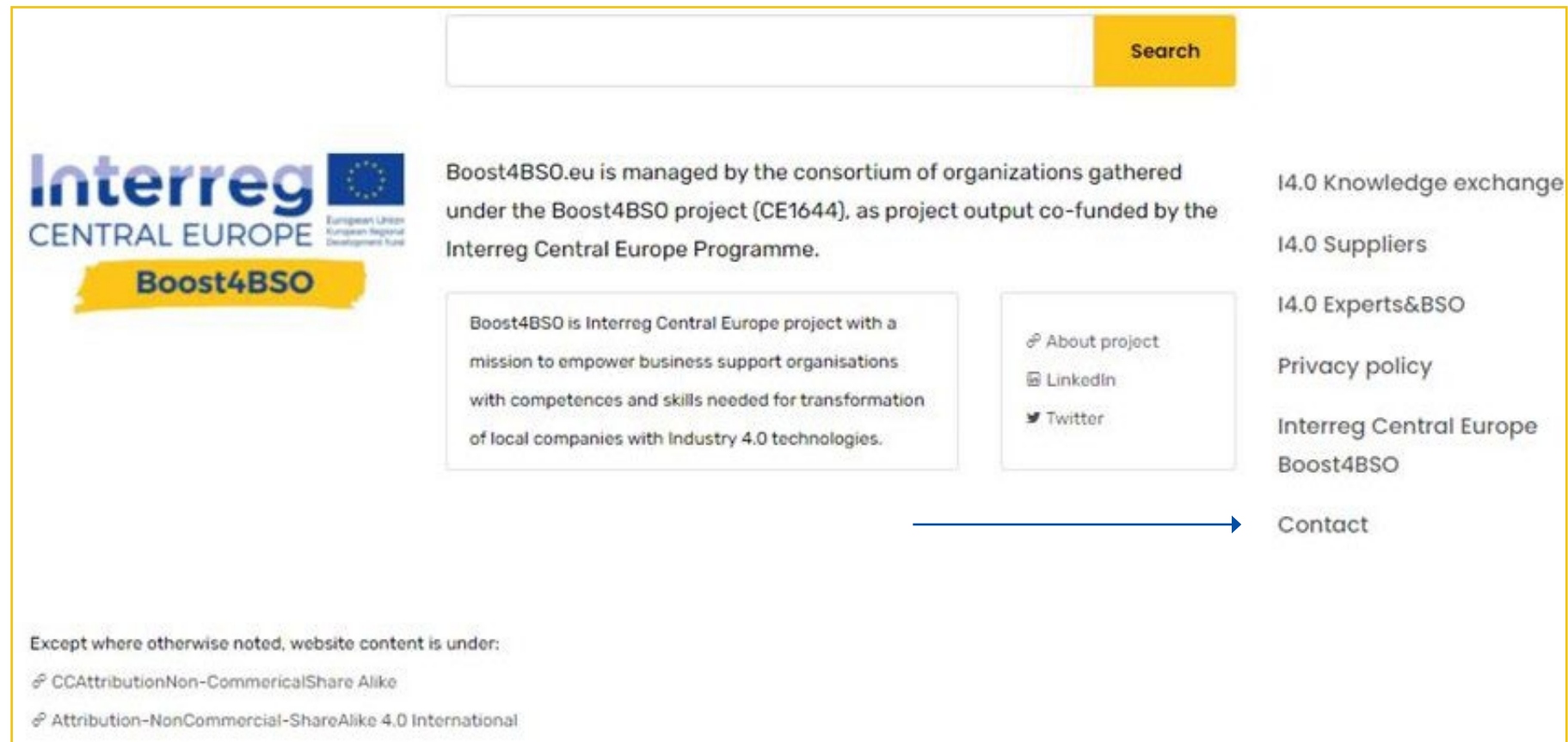
- **I4.0 Knowledge exchange** – posts including information, know-how and Industry 4.0 transformation knowledge sources
- **I4.0 Suppliers** – posts including information on technology providers and turnkey solutions for Industry 4.0
- **I4.0 Experts & BSOs** – profiles of experts and business support organizations which can support Industry 4.0 transformation projects

You can navigate through different content by using the main navigation bar on top of the webpage, Search engine, tags listed in sidebar and menus with listed types of content.

User guide. #2

Create content

Only users with the role of the Content editor can create content on the platform. In order to become Content editor, please contact us via the Contact form accessible in the bottom of the webpage.

In order to create content, you need to click on the +Add content button in the main navigation on top of the webpage.

I4.0 Knowledge exchange   I4.0 Suppliers   I4.0 Experts & BSO   My content   + Add Content

Then you can choose between 3 types of content you want to publish:

- **I4.0 Knowledge exchange** – posts including information, know-how and Industry 4.0 transformation knowledge sources
- **I4.0 Suppliers** – posts including information on technology providers and turnkey solutions for Industry 4.0
- **I4.0 Experts & BSOs** – profiles of experts and business support organizations which can support Industry 4.0 transformation projects

Save as

Draft

Save   Preview

When you insert all the necessary information into the content input form, at the bottom of the form you can choose to save your content as:
- **Draft** – saved to be edited later, not submitted to be reviewed and published
- **Submitted** – the content is submitted to administrators to be reviewed and published publicly on the website

Save as

Submitted

Save   Preview

Suppliers & solutions

This type of content is used to create information about the technology providers and their solutions for the industry.

First there is the "Supplier/solution name" field which serves as the title of this content.

In the "Title image" you can attach an image that represents the supplier (for example its logo).

The "Body" field the description of the technology supplier, their skills etc or the features of the solution you are proposing.

In the "URL" field you can add the web address of the supplier.

The "Link text" field lets you add the text which will be displayed as an active link.

The "Tags" field lets you add relevant topics that are related to the supplier or solution that you are creating.

This field is an autocomplete form. To add more tags click on the "Add Another Item" button.

Suppliers & solutions

Add information about the technology providers and their solutions for Industry 4.0

Expert & business support organisations

The "Name and Surname/Organization" field serves as the page title.

In the "Title image" field you can place an image that represents the organisation. The "Expertise/company description" field lets you input all relevant information about the organisation, while In the "URL" field you can add the organisation's web address.

The "Link text" field lets you add the text which will be displayed as an active link in while the "Tags" field you can add relevant topics.

Expert & business support organisation

Add information about experts and organizations supporting Industry 4.0 transformation
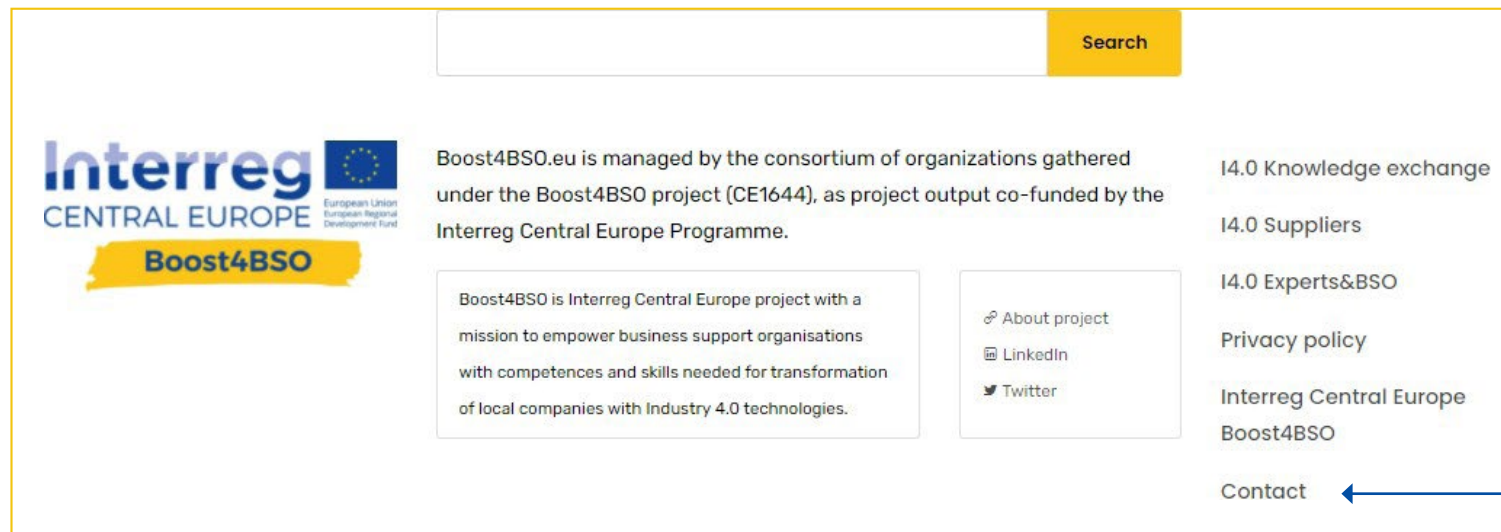
Knowledge exchange

You should choose this content type if you want to add information about courses, projects, trainings, conferences etc. that aim to increase knowledge on the certain topics relevant to the industry.

The "Title" field provides a name for the given activity.

In the "Short description" field you can add the aims of the activity for example, while in the "Body" field you can add a detailed description of it. There is a checklist where you can check the boxes for the competences that a given activity develops and there is also a checklist where you can decide to which content type the activity belongs.

Knowledge exchange

Add description and link to information, know-how and Industry 4.0 transformation knowledge

Contact

In case of any issues or questions, please feel free to contact us vis the Contact form available at the bottom of the webpage.

05.

Peer Learning and Learning by doing
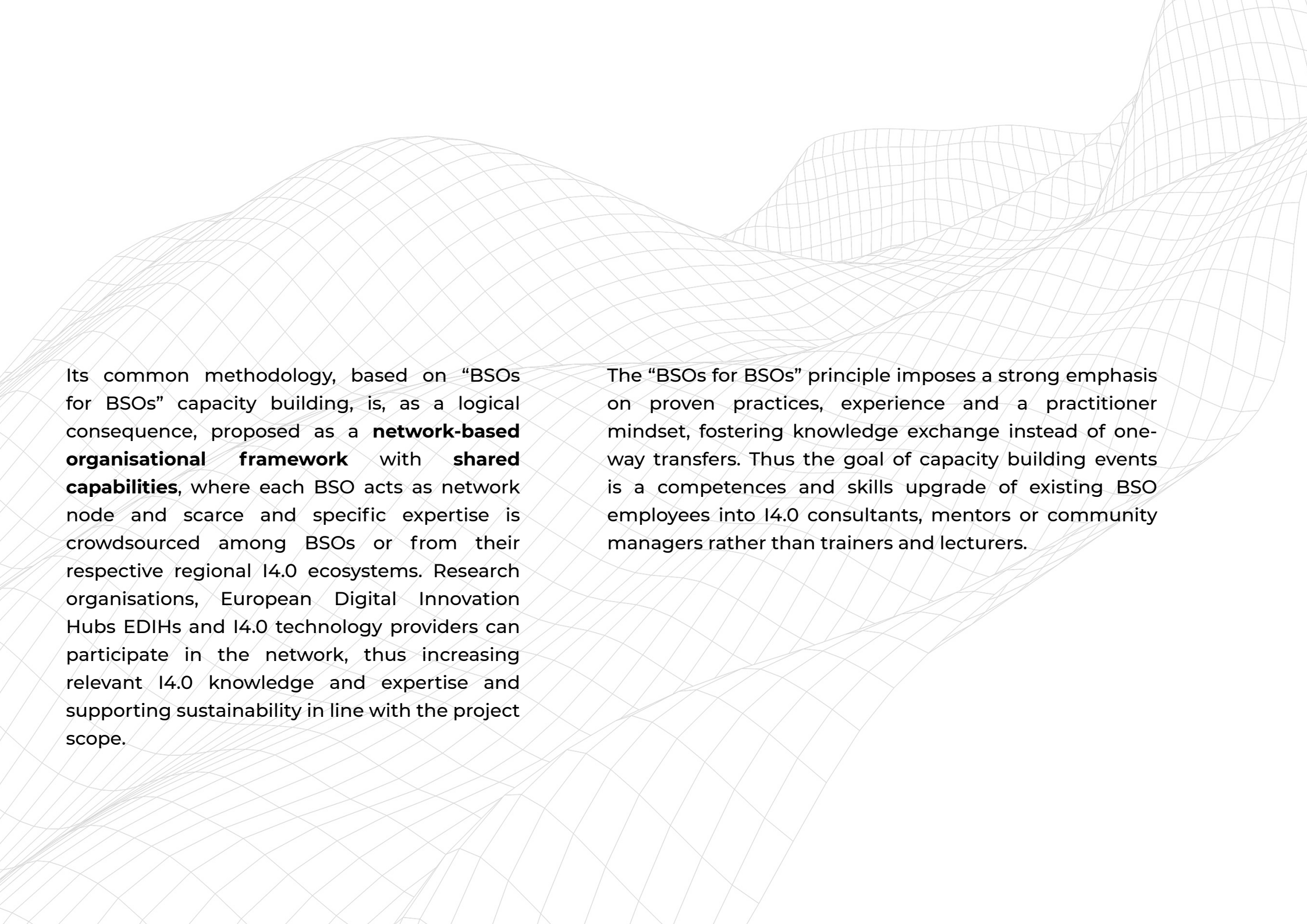
Capacity building based on "BSOs for BSOs" principle

As defined by the project, BSOs are building their capacities by sharing practices, knowledge and upscaling of selected CE+H2020 project content. At least two waves of BSO capacity building events have been organised with clearly stated intention of sustainable follow up.

A further downstream mechanism of scaling up BSO capacity building in whole Central Europe was developed during WP T2 "Downstreaming knowledge to CE BSOs" and continued, analogous to the snowball effect, starting with partner BSOs (wave 1), followed by associated partners and external BSOs (wave 2).

Its common methodology, based on "BSOs for BSOs" capacity building, is, as a logical consequence, proposed as a **network-based organisational framework** with **shared capabilities**, where each BSO acts as network node and scarce and specific expertise is crowdsourced among BSOs or from their respective regional I4.0 ecosystems. Research organisations, European Digital Innovation Hubs EDIHs and I4.0 technology providers can participate in the network, thus increasing relevant I4.0 knowledge and expertise and supporting sustainability in line with the project scope.

The "BSOs for BSOs" principle imposes a strong emphasis on proven practices, experience and a practitioner mindset, fostering knowledge exchange instead of one-way transfers. Thus the goal of capacity building events is a competences and skills upgrade of existing BSO employees into I4.0 consultants, mentors or community managers rather than trainers and lecturers.

The first wave of capacity building was intended to be a peer-to -peer knowledge exchange within the partnership.

Wave 1

8 PPs

Additionally, other staff members of the 8 PPs were encouraged to participate

24 staff members

In total, 24 staff members of all project partners participated. In some cases, staff members of intermediaries, which are closely connected to PPs, also joined the web-sessions.

4 topics

For 4 specific topics the moderating partners invited external experts.

7 online-session 25 people

On average, 25 people participated in each of the 7 online-sessions."

10 external experts

In total, 10 people of the external experts institutions participated in the respective sessions.

36 BSOs

36 BSOs (clusters, innovation agencies, incubators/accelerators, sectoral agencies, interest groups, etc.)

36

6 Countries

from Austria, Germany, Poland, Italy, Croatia and Slovenia

6

8 PPs

together with the 8 project partners

8

Wave 2

40 people x 4 online-sessons

On average, 40 people participated in each of the 4 online-sessions about:

- Assessment
- Technology implications
- Business implications
- Transformation roadmap

40X4

5 sessions

4 online + 1 local session of the second wave of capacity building

4+1

A AUSTRIA PROJECT PARTNER 1 (LEAD PARTNER)
Business Upper Austria

B ITALY PROJECT PARTNER 2
Friuli Innovazione Research and Technology Transfer Centre

C CROATIA PROJECT PARTNER 3
STEP RI science and technology park of the University of Rijeka Ltd.

D GERMANY PROJECT PARTNER 4
Bayern Innovativ

E ITALY PROJECT PARTNER 5
MESAP Innovation Cluster

F POLAND PROJECT PARTNER 6
**KATOWICE SPECIAL ECONOMIC ZONE
SILESIA AUTOMOTIVE & ADVANCED MANUFACTURING**

G CZECH REPUBLIC PROJECT PARTNER 7
Association of research organizations

H AUSTRIA PROJECT PARTNER 8
University of Applied Sciences Upper Austria

4 **D**

4 **E**

B N. OF COMPANIES ACCEPTED

4 G

F 4

3 A
H
3

4 B

5 C

"

31

Companies accepted and Action Plans

Experienced BSOs with years of practice behind them, like the Project Partners, are sharing the common idea that the exchange of experiences is the most effective way to spread knowledge and multiply its effects.

But knowledge alone is not enough. In fact, even though the model may be shaped by operational needs, it is only with practice that we can provide factual counter-evidence of the correctness of the actions undertaken and the tools adopted. For this reason, the cycle of seminars in waves 1 and 2 was followed by a Pilot Action during which the PPs field-tested the knowledge acquired and the methodology outlined.

A pilot action has a twofold task: on the one hand, it makes it possible to offer an experimental service to participating SMEs within the framework of a European project, i.e. in a "protected" environment with a high level of commitment.

On the other, it allows the implementation of the methodology to be monitored and critical or weak points to be corrected as they arise.

The Pilot Action is in fact accompanied by constant monitoring of progress together with the Partners, and thus problems encountered by one Partner may be solved by another Partner with similar experience or solutions put forward by one that has already adopted effective countermeasures.

Pilot Actions are therefore instrumental in testing and refining the Boost 4 BSOs methodology.

By the means of a call for Expression of Interest, 30 test bed companies were selected and offered specialized support services based on the competence pack designed by Boost4BSO project. The support provided to the selected SMEs includes:

i) a maturity assessment;

ii) Strategic and/or business model development;

iii) An Action Plan for product/service innovation.

Within the framework of the pilot action selected companies were supported by BSO experts for a service of 5 person-days delivered over a maximum period of 6 months. At the end of the process, an Industry 4.0 Action Plan tailored to the companies' needs, expectations and maturity stage was delivered to each company.

Credits

"Boost4BSO is Interreg Central Europe project with a mission to empower business support organisations with competences and skills needed for transformation of local companies with Industry 4.0 technologies.

The project is build upon the outputs of previous EU funded projects: THINGS+, InnoPeer AVM and IoT4Industry."

BSO capacity building in Central Europe

Boost4BSO Platform
boost4bso.eu/contact

Boost4BSO official website
www.interreg-central.eu/Content.Node/Boost4BSO.html